

Cognitive Tools for the War Fighter

The objective of this research area is to develop technology for a new class of cognitive systems. A cognitive system is one that, among other things: Can reason in a variety of ways, using substantial amounts of appropriately represented knowledge, Can learn from its experiences so that its performance improves as it accumulates knowledge and experience, Can explain itself and can accept direction, Can be aware of its own behavior and reflect on its own capabilities, and can respond in a robust manner to surprises.

There are major research challenges in all areas of cognitive information processing technologies. In the context of an autonomous or semi-autonomous cognitive agent, there are a host of capabilities and issues of interest; these include perception; representation and reasoning; learning; communication and interaction; architectures for cognition; and system integration. We are also interested in robust hardware and software infrastructure for building and maintaining cognitive systems and networks of systems. Associated programs include: Perceptive Assistant that Learns (PAL), REAL World Reasoning (REAL), Architectures for Cognitive Information Processing (ACIP), and Biologically-Inspired Cognitive Architectures (BICA).

